

Evidence-based answers from the
Family Physicians Inquiries Network

CLINICAL INQUIRIES

Q/ Which asthma patients should get the pneumococcal vaccine?

EVIDENCE-BASED ANSWER

A/ ADULTS BETWEEN THE AGES OF 19 AND 64 YEARS who have chronic lung disease, including asthma, should get the vaccine, as should all patients 65 years and older (strength of recommendation [SOR]: C, consensus guidelines). Evidence doesn't support routine vaccination of children with asthma or adults younger than 65 years who don't have chronic lung disease to decrease asthma-related or pneumonia-related hospitalizations (SOR: B, 1 retrospective cohort study and 1 retrospective, case-controlled cohort study).

related length of hospital stay was shortened by about 2 days ($P=.039$). The study found no difference in pneumonia-related hospitalizations among all vaccinated patients.

Effect on younger patients is unclear

Because the investigators didn't analyze asthma-related or pneumonia-related hospitalizations

among asthmatic patients 64 years and younger, the effect of pneumococcal vaccination on this younger subgroup can't be differentiated from the entire group of patients with asthma.¹

What about pneumococcal hospitalization?

A retrospective, case-controlled cohort study examined the impact of pneumococcal vaccination on any pneumococcal-related hospitalization in patients with COPD or asthma.² The study included 2746 adults with asthma (74.2% younger than 64 years) who were followed for about 2.1 years before and 2.6 years after vaccination.

Investigators found no significant differences in risk of pneumococcal-related hospitalization between asthma patients and controls throughout the study. They didn't evaluate asthma-related hospital admissions.

Impact of vaccine on invasive disease in younger asthma patients?

A retrospective, nested, case-controlled study examined the relationship between asthma

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Pneumococcal vaccine is indicated for adults between 19 and 64 years of age who have asthma or other chronic lung disease.

Evidence summary

A 5-year retrospective cohort study of 9170 patients evaluated the effect of pneumococcal vaccination on incidence and length of all-cause hospitalizations and hospitalizations related to respiratory and otorhinolaryngologic syndromes, including asthma and pneumonia.¹ The vaccine was given to all patients older than 64 years (7834 patients [85%]) and any patient at risk for pneumococcal infection or complications, including patients with asthma, chronic obstructive pulmonary disease (COPD), bronchitis, chronic respiratory disease, cardiovascular disease, chronic renal failure, diabetes mellitus, immunodeficiency, and functional or anatomic asplenia (1336 patients [15%]).

The number of all-cause hospitalizations was reduced by 58% in patients who received the pneumococcal vaccine (relative risk [RR]=0.96; 95% confidence interval [CI], 0.94-0.98). In vaccinated patients with asthma (793 patients [8.7%]), asthma-related hospitalizations decreased by 78% (RR=1.82; 95% CI, 1.35-2.45; NNT=49) and average asthma-

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Evidence doesn't support routine vaccination of children with asthma or adults younger than 65 years who don't have chronic lung disease.

and invasive pneumococcal disease (IPD) in 6985 patients enrolled in Tennessee's Medicaid program.³ Patients 2 to 49 years of age with any IPD diagnosis were identified using International Classification of Diseases (ICD-9-CM) codes and followed for 8 years.

Asthma patients without coexisting conditions that confer a high risk of IPD (such as diabetes, cardiac disease, and infection with human immunodeficiency virus) had a 14.7% risk of IPD compared with a risk of only 7.4% in age-matched controls (adjusted odds ratio=2.4; 95% CI, 1.7-3.4). The authors concluded that this Medicaid population with asthma had an increased incidence of IPD of 1 to 3 cases annually per 10,000 people. The effect of pneumococcal vaccination on the incidence of IPD in these younger asthma patients is unknown, however.³

Recommendations

The National Asthma Education and Prevention Program (NAEPP)⁴ and the Global

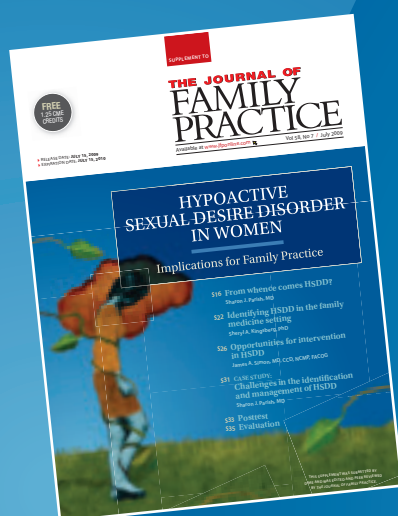
Initiative for Asthma (GINA)⁵ make no recommendations regarding the administration of the pneumococcal vaccine.

The Advisory Committee on Immunization Practices (ACIP) recommends vaccination for all adults 65 years and older and adults 19 years and older with chronic lung disease, including asthma, or other chronic medical conditions such as cardiovascular diseases, diabetes, chronic liver diseases, chronic alcoholism, chronic renal failure, asplenia, and other immunocompromising conditions.⁶

The British Department of Health recommends vaccination with either the 7-valent conjugate or the 23-valent polysaccharide pneumococcal vaccine for all asthma patients taking systemic steroids longer than 1 month at a dose equivalent to prednisolone 20 mg daily and for children weighing less than 20 kg who take daily steroids at a dose of ≥ 1 mg/kg. Efficacy studies aren't available to support this recommendation.⁷ **JFP**

References

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